



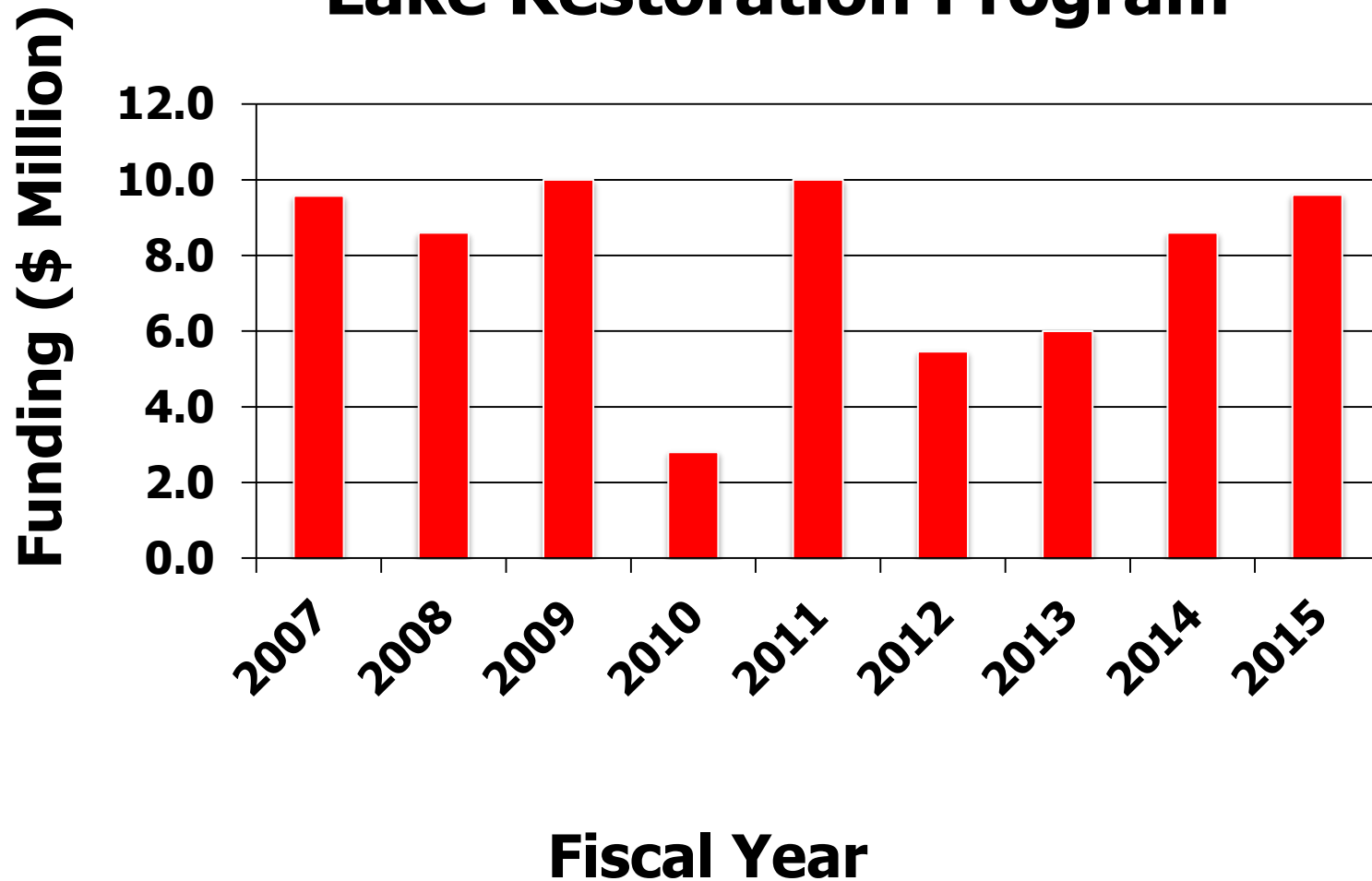
IOWA DEPARTMENT OF NATURAL RESOURCES

LEADING IOWANS IN CARING FOR OUR NATURAL RESOURCES



Iowa's Lake Restoration Program

Lake Restoration Program



- \$71 million over the past 9 years
- Leveraged with local, state and limited federal dollars



Restoration Focused on Iowa's Significant, Publicly-owned lakes

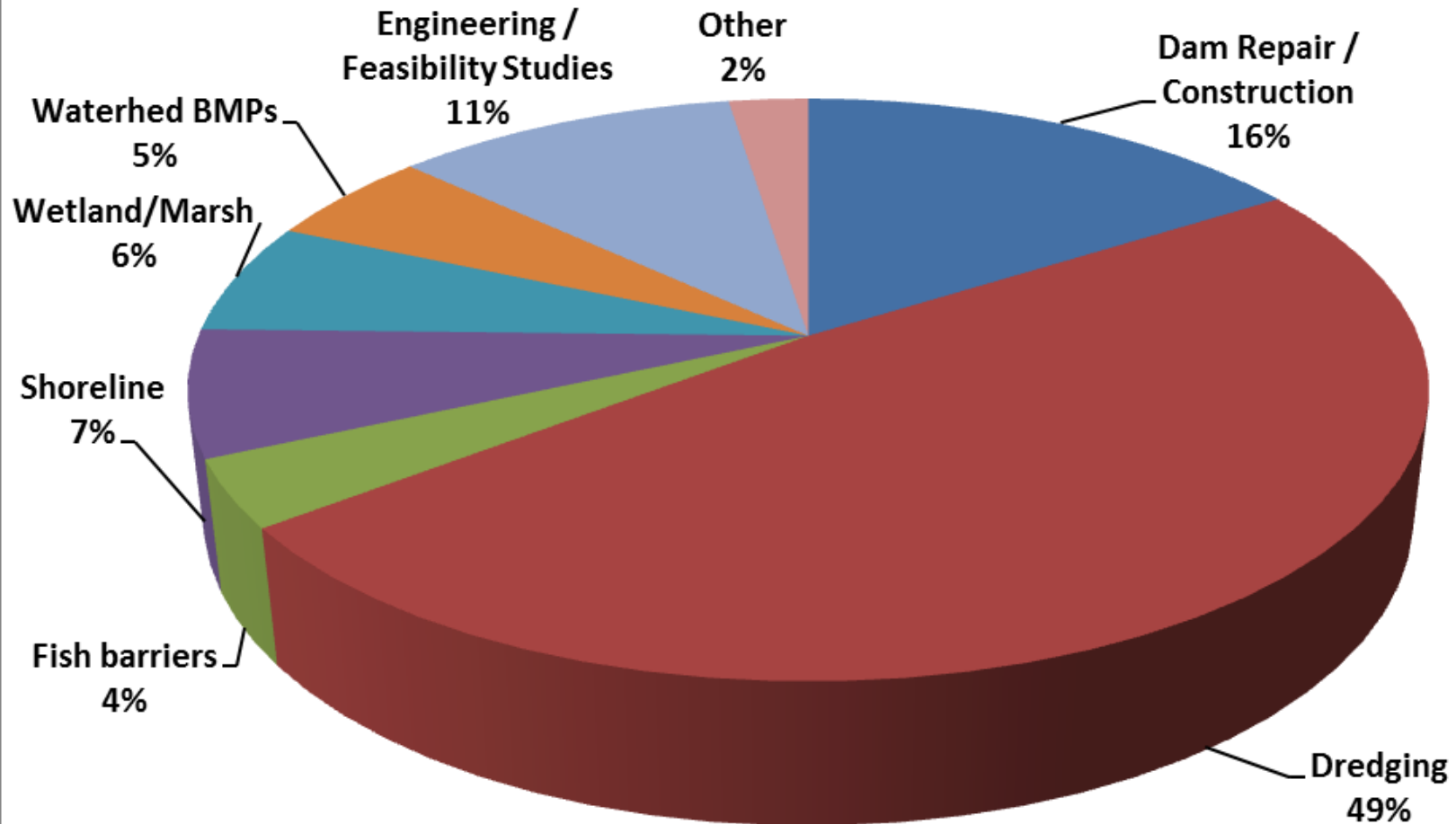
- Multi-use, recreational resources
- Prioritized based on water quality, public benefit, and restoration potential



Iowa's Lakes

- **Constructed (90)** **67%**
 - Surface Area** **200 acres**
 - Mean Depth** **10 feet**
 - WS:LA** **40:1**
- **Natural (25)** **19%**
- **Surface Mines (9)** **7%**
- **Oxbows (6)** **4%**
- **COE Reservoirs (4)** **3%**

Lakes Program Historic Spending by Category



Program Goals



- Cost effective, positive return for Iowa
- Significant improvement to water clarity, safety and quality of Iowa lakes
- Increase usage and improve quality of life

Iowa Use and Economic Benefits

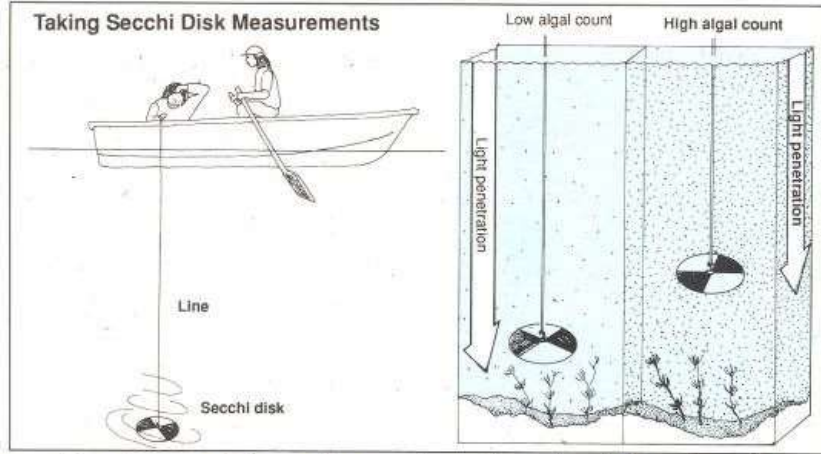
- Six of ten Iowans visit lakes each year
- They average over eight visits per year
- Statewide our lakes generate \$1.9 billion in annual spending by Iowans



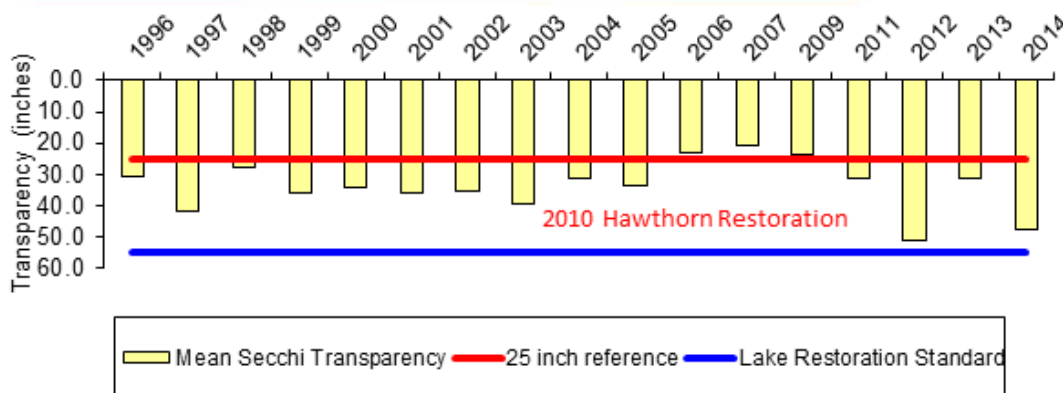
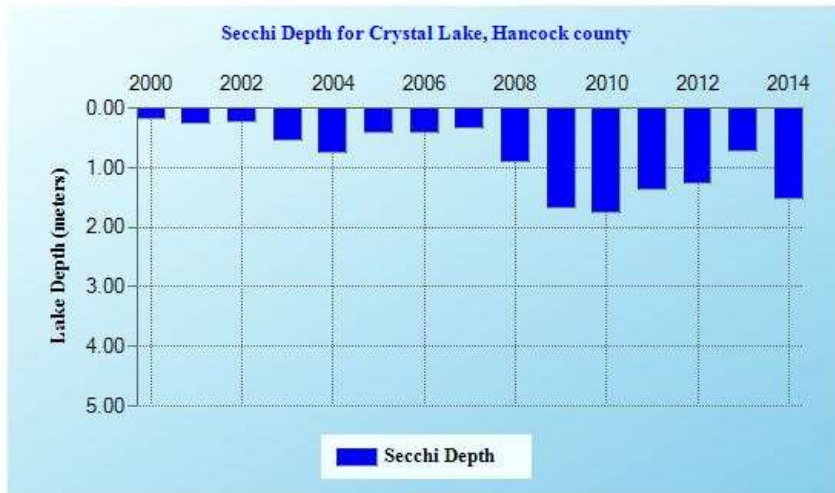
- Lake use increased 27% from 2005 to 2009
- Lakes that complete watershed/lake improvement exceed state visitation averages and their own pre-renovation visitation levels



Lake Macbride in Johnson County.



Source: Michaud, 1991 "A citizen's Guide to Understanding and Monitoring Lakes and Streams"



Crystal Lake (Hancock)

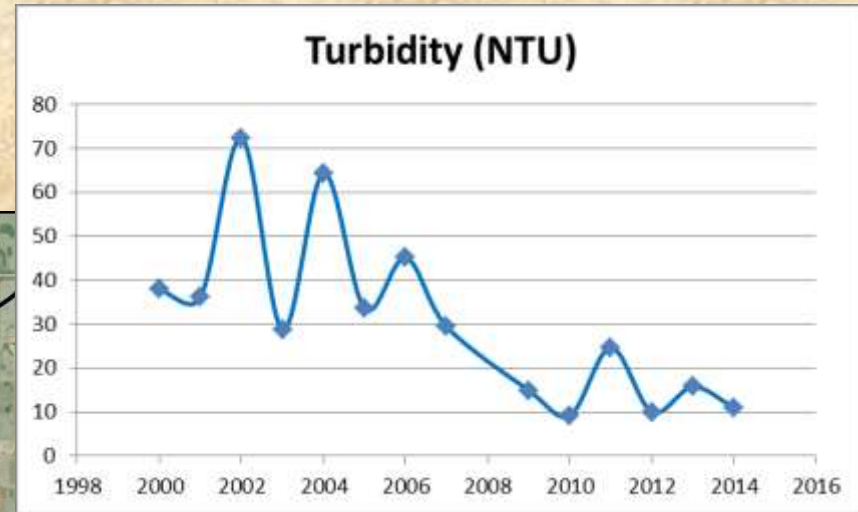
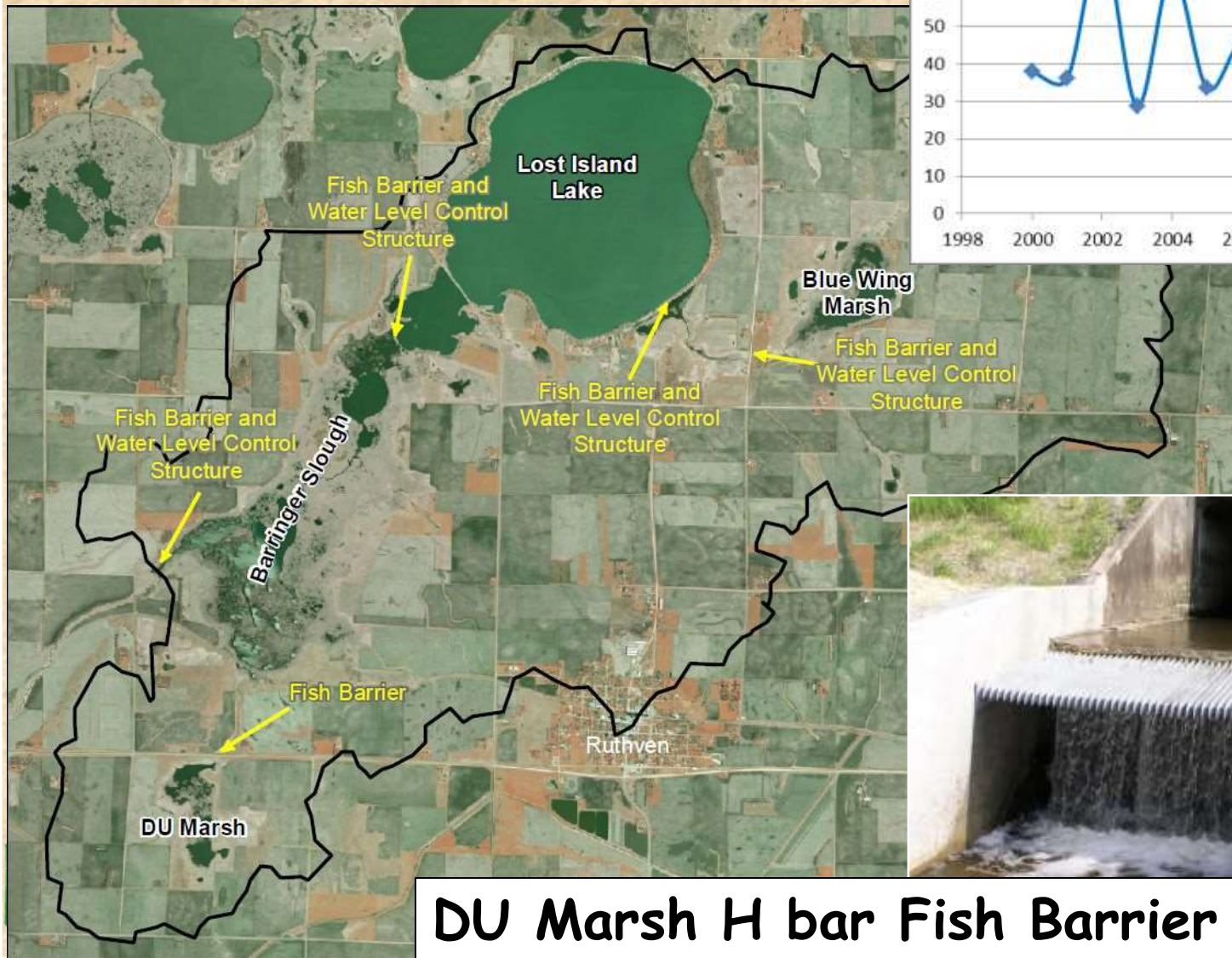
- Water transparency has increased significantly compared to pre-project conditions.
- The fishery went from fair-poor to excellent-good. We are seeing usage from all across the state. It is getting as much winter fishing pressure as Clear Lake!
- We have seen a lot of aquatic vegetation growth here as well.

Hawthorn Lake (Mahaska)

- Restoration started in winter 2009/2010 and we are seeing big improvement in water clarity since then.
- Habitat is outstanding, great water clarity, and the fishery has responded with excellent largemouth bass angling and bluegill angling already.
- The parking lots have cars again consistently.

IDALS - Watershed Improvement Review Board (WIRB)

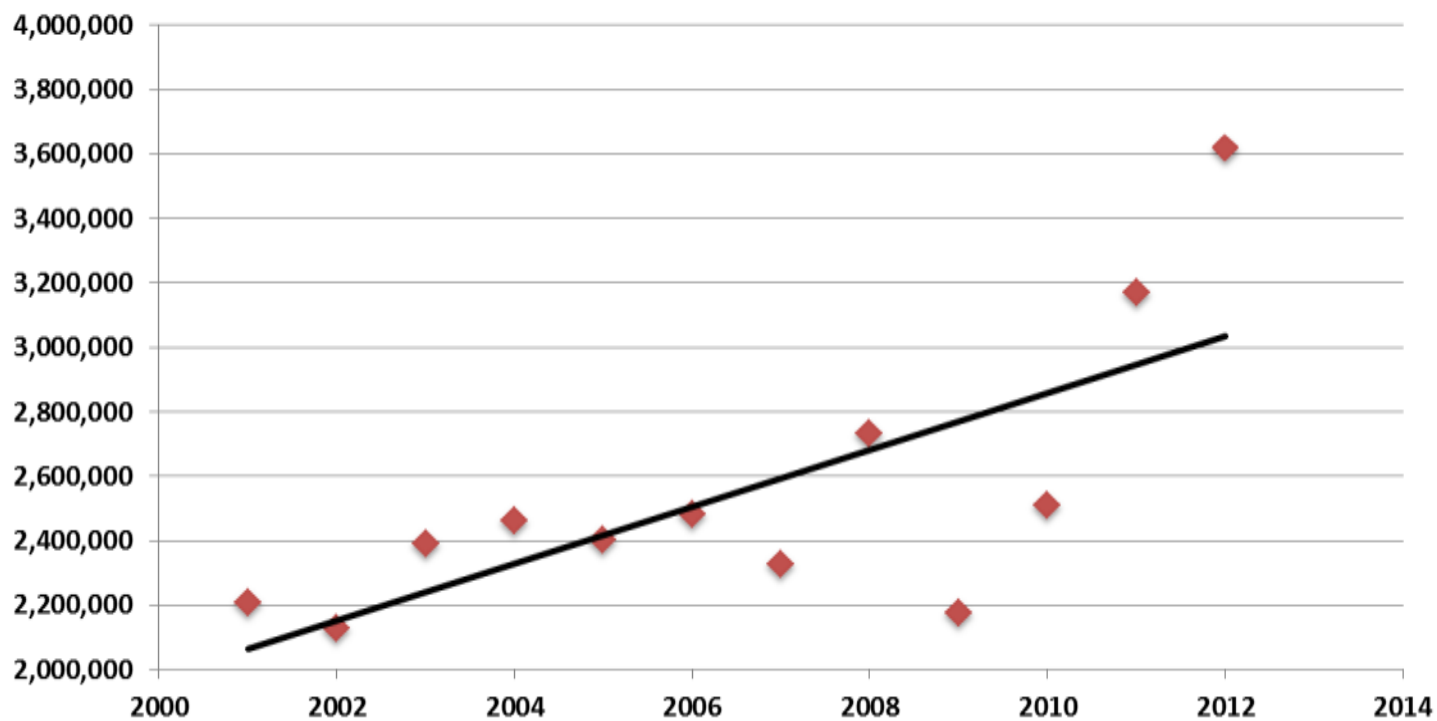
Lost Island Lake (Palo Alto)



DU Marsh H bar Fish Barrier



Visitations at Parks with Major Lake Restoration Efforts



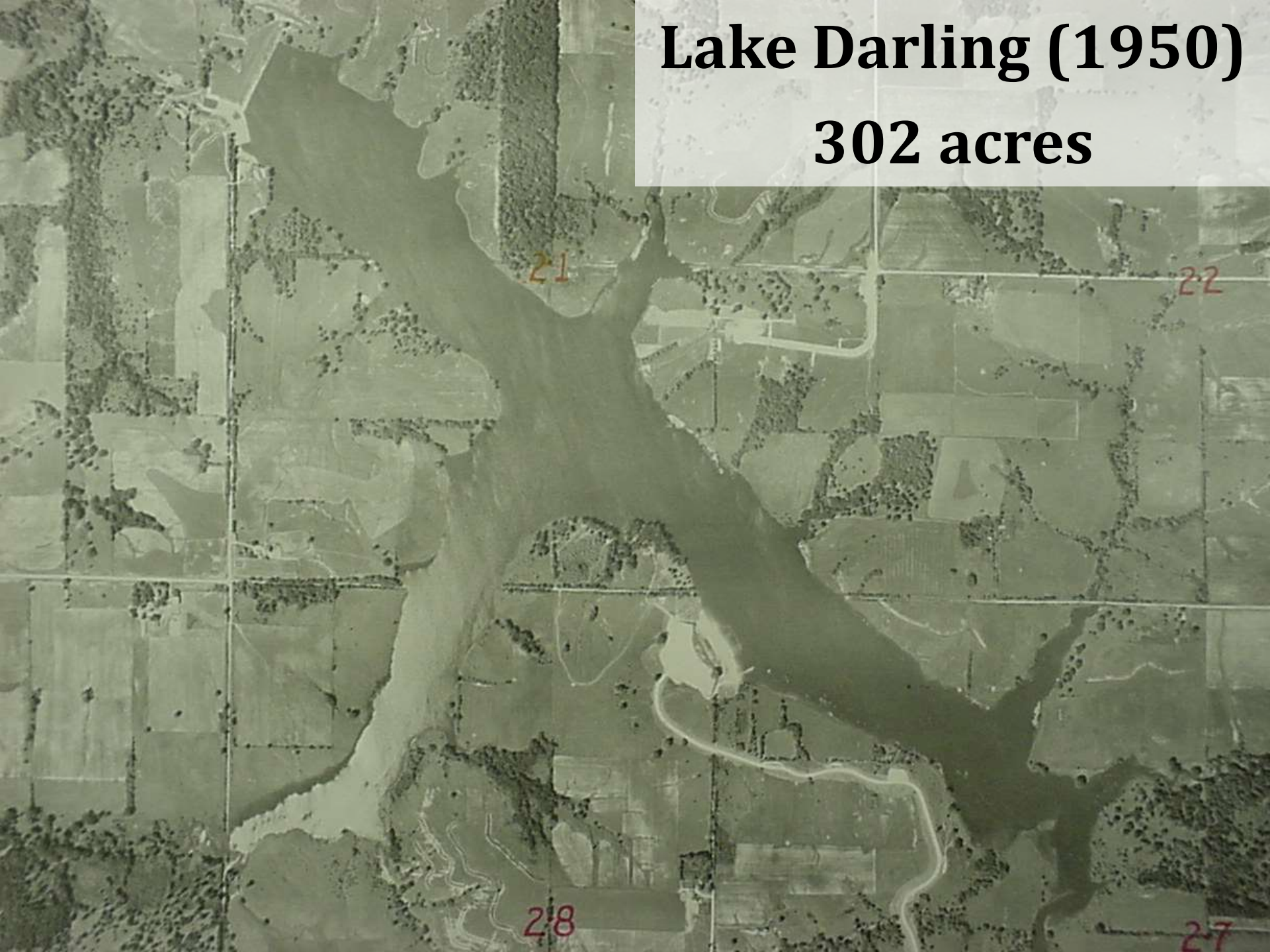
Lake Darling Gate Setting

- September 17, 1950
- Created Iowa's largest manmade lake



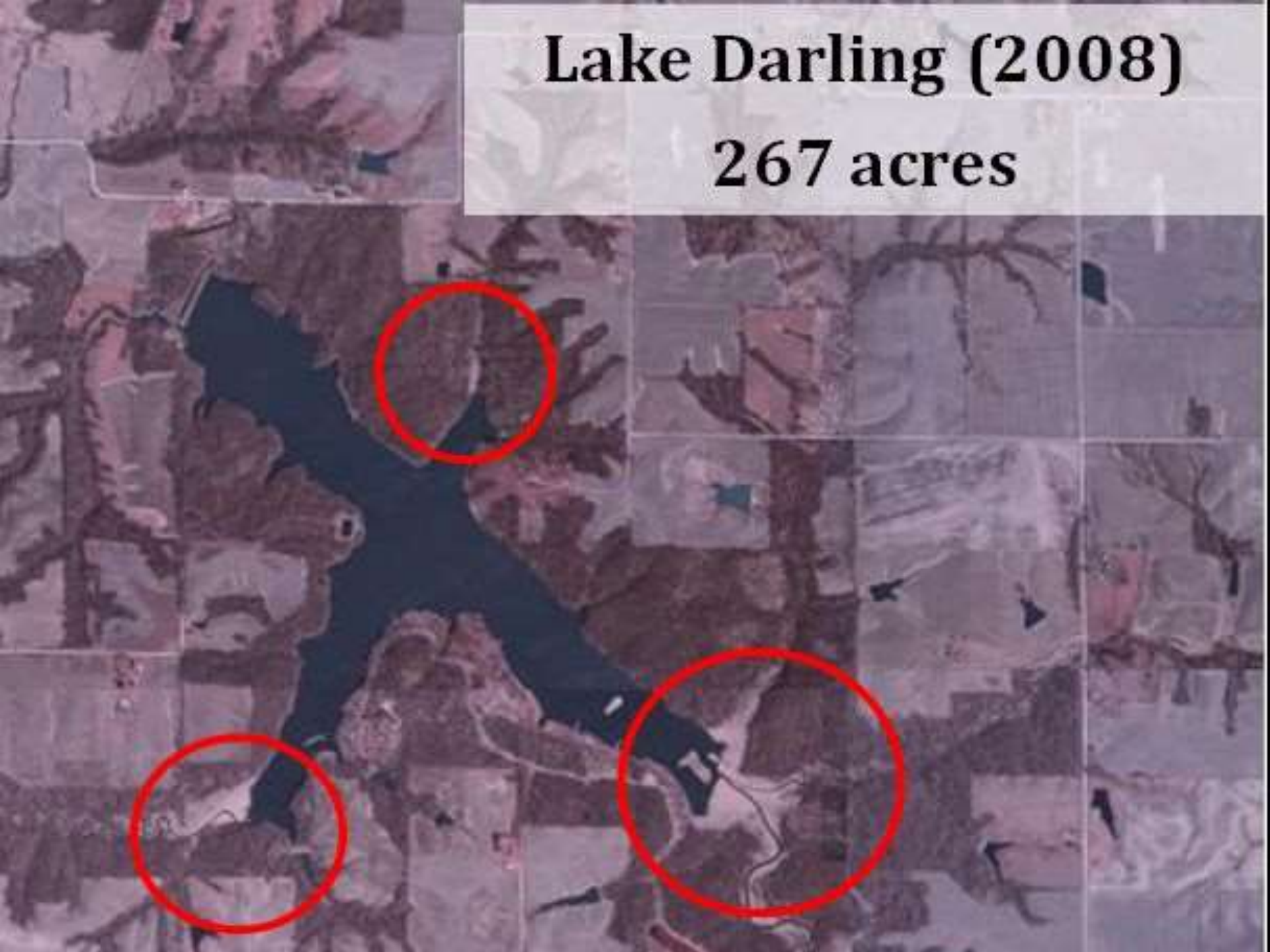
Lake Darling (1950)

302 acres



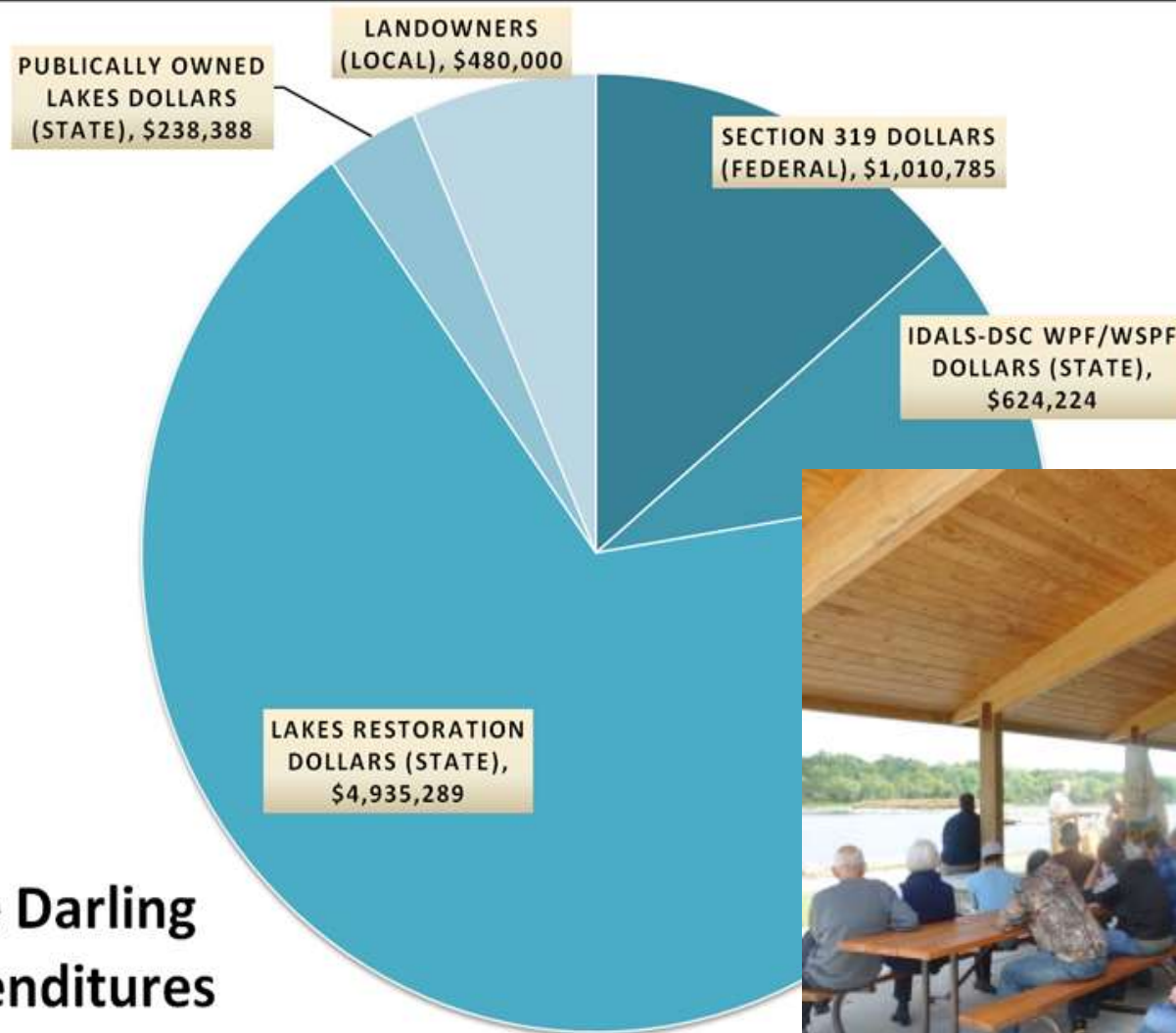
Lake Darling (2008)

267 acres



Improving our State Parks - Lake Darling (Washington)

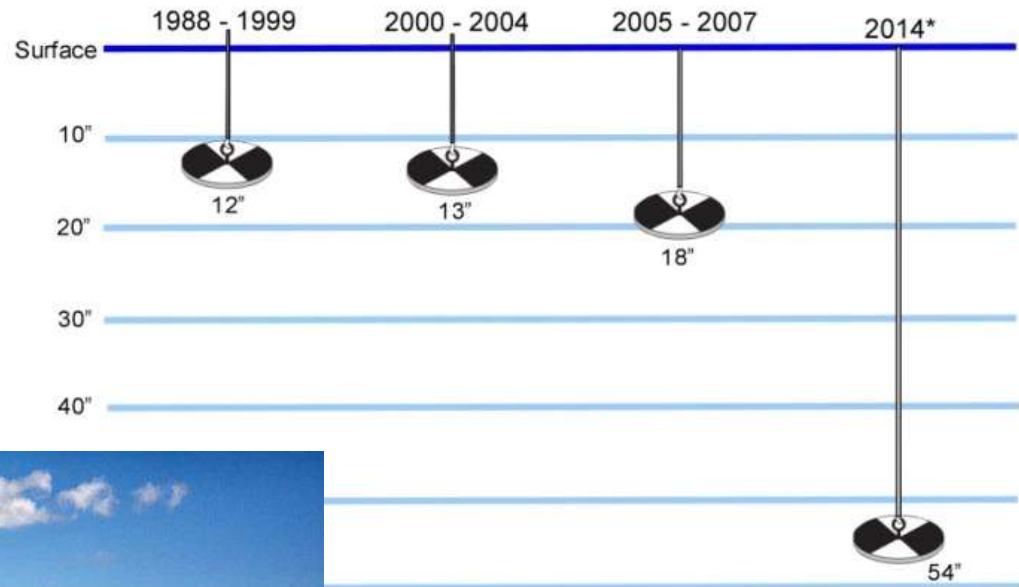
- Successful watershed protection, campground improvement and lake restoration



**Lake Darling
Expenditures
2000 - 2014**



Average Yearly Secchi Disk Depths for Four Time Periods at Lake Darling



* Average for April thru September

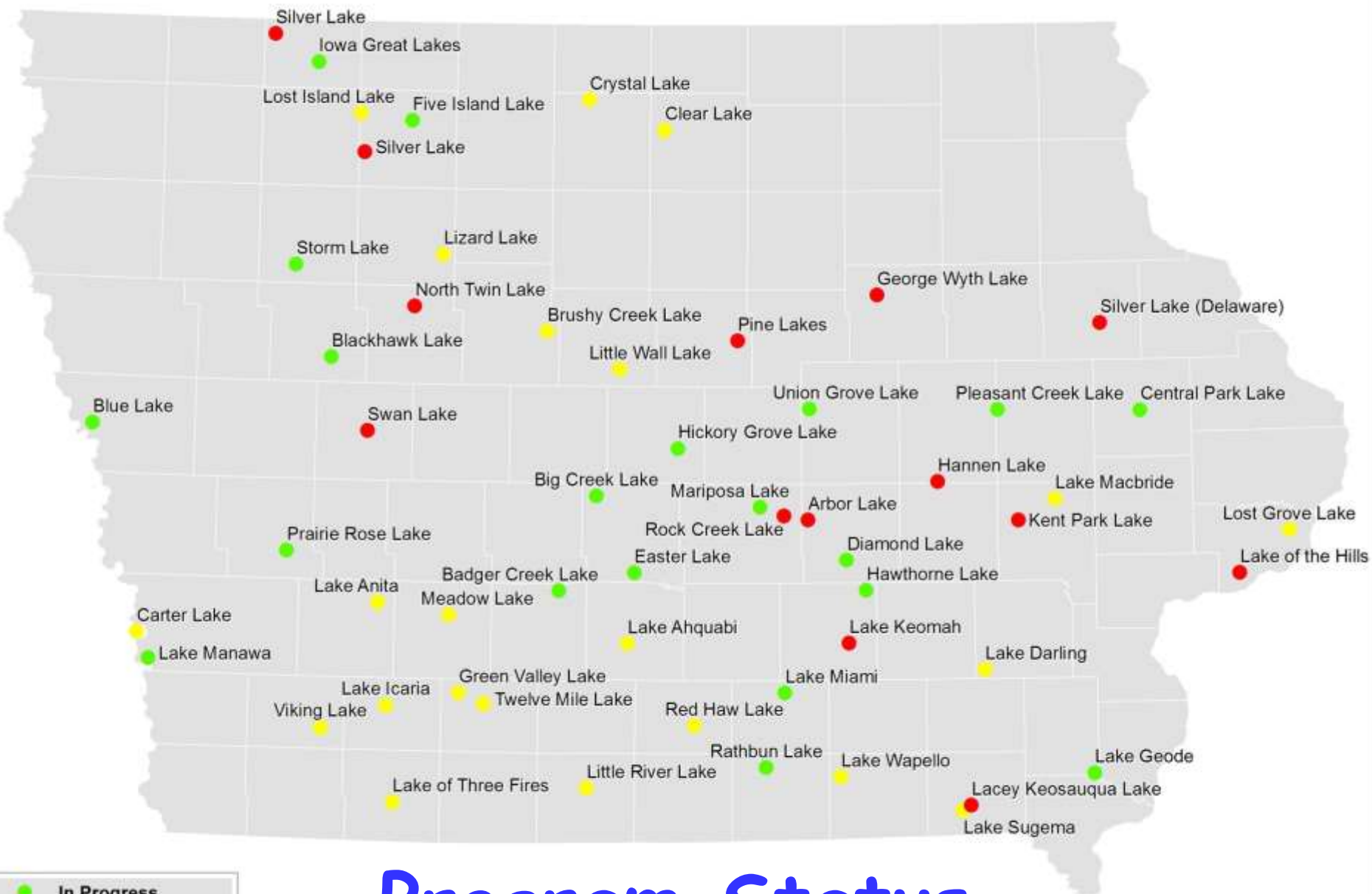


Immediate water quality improvements

Ten-year Plan (FY15 – FY24)

- Program focused on an active list of 35 significant-publically owned lakes prioritized for restoration funding
- Long-term comprehensive approach to restoration: maintain partnerships with communities from assessment/planning to implementation
- At current \$9.6 million annual funding level plan to complete 29 major from FY15-FY24





Program Status

| Project Name | County | Proposed FY16 Budget | Description FY15-FY17 |
|---------------------|---------------|-------------------------------------|--|
| Hawthorn L. | Mahaska | \$80,000 | Sediment control ponds, watershed BMPs |
| Pleasant Creek L. | Linn | \$750,000 | Shoreline armoring and deepening |
| Union Grove L. | Tama | \$520,000 | Shoreline stabilization, spillway repair, dredging |
| Blue Lake | Monona | \$750,000 | Fish barriers, in-lake restoration |
| Central Park L. | Jones | \$250,000 | Watershed improvement, In-lake restoration |
| Easter Lake | Polk | \$750,000 | Shoreline, spillway repair, Yeader Creek stabilization, dredging |
| Mariposa Lake | Jasper | \$250,000 | Watershed assessment, engineering design |
| Five Island L. | Palo Alto | \$50,000 | Dredging, watershed improvement |
| Hickory Grove L. | Story | \$450,000 | Stream corridor restoration/sediment structure, in-lake restoration |
| Kent Park L. | Johnson | \$150,000 | Water quality plan implementation |
| L. of the Hills | Scott | \$150,000 | Watershed assessment and improvement |
| Lacey Keosauqua | Van Buren | \$100,000 | Watershed assessment and improvement |
| Lake Geode | Henry | \$150,000 | Sediment control ponds, In-lake restoration |
| Lake Keomah | Mahaska | \$100,000 | Watershed assessment and improvement |
| Storm Lake | Buena Vista | \$850,000 | Dredging, shoreline stabilization |
| Black Hawk L. | Sac | \$900,000 | Inlet dredging, watershed improvement, aquatic plant management |
| Lake Manawa | Pottawattamie | \$1,500,000 | Dredging, Mosquito Creek / Indian Creek |
| IA Great Lakes | Dickinson | \$750,000 | Marble-Hottes, Spring Run, Center L.-shoreline, fish barriers, wetland |
| Rathbun Reservoir | Appanoose | \$250,000 | On-going support of watershed improvement and COE partnership |
| Lake Assessment | | \$100,000 | Lake Monitoring, 2014 - 2016, Lake economic analysis, DF Studies |
| Minors | | \$150,000 | |
| Proj. Mgmt./Eng. | | \$500,000 | Engineering / Administration |
| Shallow Lakes | | \$100,000 | Rice Lake (Winnebago) |
| Total | | \$9,600,000 | |

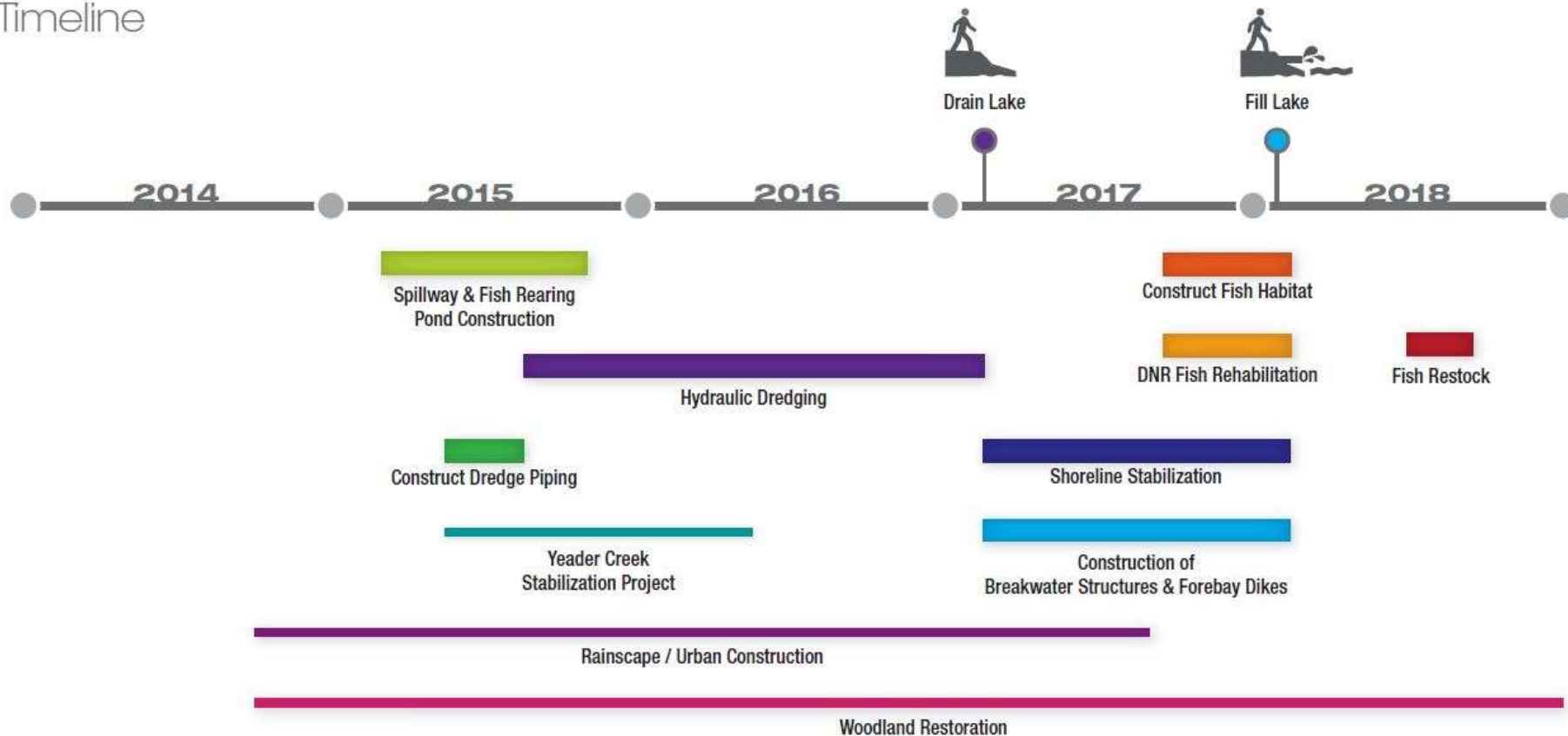




EASTER LAKE
WATERSHED

RESTORATION

Timeline



Spillway & Rearing Pond



Construct Dredge Piping



Shoreline Stabilization



Water Structures



Hydraulic Dredging



DNR Fish Rehabilitation



Construct Fish Habitat



Fish Restock

For more information...

www.iowadnr.gov/water/lakerestoration/

George Antoniou 515-725-8449
george.antoniou@dnr.iowa.gov

